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THE STRATIOMYIDAE (DIPTERA) OF THE
GALÁPAGOS ISLANDS¹

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The stratiomyid fauna of the Galápagos Islands is, as would be expected, limited but quite interesting. So far as known it consists of five species, at least four of which are endemic though showing close relationships with the other Neotropical fauna, either insular or continental.

Previous studies of the Galápagos Stratiomyidae have been quite scant. The first species to be known from the Archipelago, *Nemotelus albiventris* Thomson (1868), was collected on the expedition of the Swedish frigate *Eugenie*, although at the time of its description it was recorded as coming from the Philippine Islands. Coquillett (1901) recorded three species, and Curran (1932) repeated these records but described as new the species which Coquillett had thought to be the same as his *Pelagomyia albitalus*, from St. Vincent. Johnson (1924) mentioned no Stratiomyidae as represented in the Williams material. Curran (1934) added several records for *Pelagomyia dubia*, including the male but without description of that sex.

The present study is based chiefly on the collections of the 1964 Galápagos International Scientific Project, though a small amount of material has come from another source. Holotypes and allotypes of the new species are in the collection of the California Academy of Sciences. I wish to express my thanks to Dr. Paul H. Arnaud, Jr., and to the California Academy of Sciences for giving me the opportunity to study this interesting collection.

***Pelagomyia dubia* Curran.**

Pelagomyia dubia CURRAN, 1932, p. 348.

This species was originally recorded from Albemarle Island by Coquillett

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(1901) as *P. albitalus* Coquillett. Curran (1932) pointed out that *P. albitalus*, as originally described from St. Vincent, is a different species, and he described the Galápagos form as *P. dubia*, the type, a unique female, coming from Charles Island.

The male is similar in appearance to the female and Curran's description applies equally well to both sexes. The amount of black pile on the frons is variable, the sexes showing no difference in this respect. Coloration is not clearly defined; reddish brown may merge into brown and into blackish, and within a series and the same sex color variation may occur; the face, frons, and vertex, for example, may range from light reddish brown to dark brown. Pale abdominal tegumentary fasciae are usually quite evident. The "pollinose" abdominal fasciae described by Curran are composed of tomentum rather than pollen; the tomentum is almost silvery and fairly long. The width of the frons and vertex is approximately the same in both sexes; the ratio of the vertex to head width in two males measured 0.24 and 0.24, that of two females measured 0.23 and 0.26.

An exceptional size range, not associated with sex, was observed, particularly in the Academy Bay series. Extremes in length measured 5.5 and 14 mm. (with ovipositor withdrawn); the usual range was 9 to 12 mm.

NEW RECORDS. 40 ♀ ♀, 16 ♂ ♂, Academy Bay, Santa Cruz (Indefatigable) Island, January 21 to February 24, 1964, E. G. Linsley, R. O. Schuster, and D. Q. Cavagnero; 8 ♀ ♀, 2 ♂ ♂, Little (North) Seymour Island, March 10-14, 1946, Dale Jenkins.

***Nemotelus albiventris* Thomson.**

Nemotelus albiventris THOMSON, 1868, p. 462.

This species was described from a unique male with the locality given as "Manilla" (Manila, Philippine Islands). Coquillett (1901) recorded it from a single specimen, sex not stated, from Albemarle Island, with the explanation that the type locality as stated by Thomson was probably erroneous, since the *Eugenie* expedition included collections from the Galápagos as well as from the Philippine Islands and other Pacific areas. Curran (1932) repeated Coquillett's record, without comment.

Coquillett was probably correct in the recognition of the Galápagos form as this species. The genus is, so far as known, foreign to the Oriental and Australasian faunas. The males which I have had for study agree quite well with Thomson's description, though some of his detailed description of the wing venation is hard to interpret. Also, his statement, "thorax . . . parce et tenuiter pallido-pubescens" hardly applies; the pubescence of the thorax is rather dense, though Thomson's specimen may have been somewhat rubbed. *Nemotelus albiventris* is close to *N. albirostris* Macquart from the southeastern United States; the two differ in a number of respects, however, chiefly in the

JUL 19 1966

537
HARVARD
UNIVERSITY

Vol. XXXIII

JAMES: GALÁPAGOS STRATIOMYIDAE

more attenuated facial prominence of *N. albiventris*, the coloration of the facial prominence (wholly whitish above in *N. albirostris*, wholly black or whitish only in front of the base of the antenna in *N. albiventris*), and the pale markings of the female abdomen (paired spots on the intermediate segments in *N. albirostris*, transverse bands in *N. albiventris*). It is reasonable to hypothecate that *N. albirostris* is ancestral to *N. albiventris*; the introduction of the ancestral stock from the coastal mainland, the present-day habitat of *N. albirostris*, to the Galápagos Islands would have been quite natural.

NEW RECORDS. 22♂♂, 10♀♀, Academy Bay, Santa Cruz (Indefatigable) Island, January 23 to February 20, 1964, R. O. Schuster and D. Q. Cavagnero; 1♀, Darwin (Culpepper) Island, January 29, 1964, D. Q. Cavagnero; 5♀♀, Tower (Genovesa) Island, March 25, 1953, Templeton Crocker.

Nemotelus acutirostris Loew.

Nemotelus acutirostris LOEW, 1863, p. 8.

This species was recorded from the Galápagos Archipelago by Coquillett (1901) on the basis of one specimen, sex not indicated, and the record was repeated by Curran (1923). It is common in Cuba, the Florida Keys, and Bimini Islands (from which I recorded it erroneously as *N. wheeleri* Melander). I have not seen any material from the Galápagos and the record from those islands may be erroneous; I have seen a closely related, undescribed species from Baja California which may be conspecific with the Galápagos form.

Brachycara digitata James, new species.

MALE. Head black, subshining; a pair of triangular ivory spots on the frontal triangle. Eyes subcontiguous for about half the distance from antennal base to anterior ocellus, set with scattered, short, stiff black hairs. Very narrow facial and occipital orbits whitish tomentose, tomentum of facial orbit almost pollen-like; face with silvery, genae with yellowish white appressed hairs. Ocellar triangle prominent, with a few whitish hairs. Antenna brownish yellow on first, second, and basal three segments of flagellum, otherwise black; hairs same color as background; terminal flagellar segment as long as preceding two combined. Proboscis pale yellow.

Thorax including scutellum black; humerus below and postalar callus in part brownish yellow; a narrow yellow line from each humerus to wing base. Mesonotum and scutellum with considerable whitish tomentum and some erect white pile, the latter more abundant posteriorly and on the scutellum; pile of pleura white, mostly semierect on mesopleura and pteropleura. Legs brownish yellow, the front pair, all coxae and trochanters, middle tarsus, and hind basitarsus more nearly clear yellow. Halteres yellow. Wing subhyaline; stigma brown; second basal cell without microtrichia except a few along its anterior margin; anal cell with microtrichia on approximately its apical half. Squamae and hairs yellow.

Abdomen pellucid yellow on disc; first tergum, basal half to two-thirds of fifth, and lateral margins of intermediate terga brownish to brownish black; the infuscation of the intermediate terga suggests anterolateral spots, but these are not clearly defined. Sternal pattern similar but with less well defined lateral margins. Terga with short, appressed black pile and sterna with similar yellow pile; sides of abdomen with erect to semirect black to yellowish pile. Genitalia (fig. 1) brownish to black, ventral plate yellow; dististylus well sclerotized, subshining, slender, with a more slender, digitate process extending ventrad C-like from its base; aedeagus trifid, the lateral processes well separated on apical part and there running almost parallel to the intromittent organ.

Length, 5–6 mm.

FEMALE. Frons broad, 0.4 head width. Frontal callus ivory, broadly interrupted medially and consequently forming a pair of slender, transverse triangles. Pile of head and thorax more uniformly silvery than in the male. Abdomen, dorsally and ventrally, pitchy or brownish black, without any pattern; basal two sterna may be more yellowish medially; pile as in the male. Genitalia brownish black. Otherwise except sexually as in the male.

TYPES. Holotype, male, Santa Cruz (Indefatigable) Island, Academy Bay, Darwin Research Station, February 1, 1964, R. O. Schuster. Allotype, female, same data but January 26. Paratypes, 6 ♂♂, 1 ♀, same data but January 26, February 7, and February 18. R. O. Schuster, and February 20. R. O. Schuster and D. Q. Cavagnero.

In my key to the known species of *Brachycara* (James, 1962, p. 88) this species runs to *B. slossonae* (Johnson); however, it is a much more robust

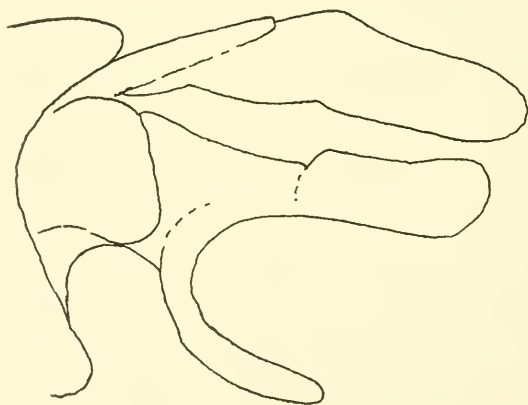


FIGURE 1. *Brachycara digitata* James, new species. Male genitalia, side view, from holotype. Setation omitted.

species; the antennae in *B. slossonae* are brownish yellow rather than clear yellow at the base and the abdomen of the female is reddish yellow. The male genitalia of the two species are strikingly different; the dististyli of *B. slossonae* are short and oval and completely lack the digitate process of *B. digitata*. *Brachycara maculata* (James), from the Bahama Islands (Bimini), has similar processes but they are filiform rather than digitate; the dististyli are also quite different, being flattened and appearing blade-like when viewed ventrally.

Dactylodeictes insularis James, new species.

FEMALE. Head and body, excluding appendages and ovipositor, wholly black. Head in profile similar to Lindner's illustration of his *D. lopesi*; antennae similar in structure, set at approximately middle of eye height; the ocellar triangle more prominent than that illustrated by Lindner, though not nearly as much so as that of *D. amazonicus* Kertész, according to Kertész' illustration. Frontal callus not well marked; area between callus and ocellar triangle wholly punctate, with appressed whitish pile (or long tomentum); area below callus glossy black and bare medially, receding somewhat into a pit toward antennal bases; a broad lateral orbit beginning at the callus and extending on each side of the depressed area, then continuing laterad and forming the facial orbits, white tomentose and pollinose; these orbits on the front are each a little more than half the greatest transverse diameter of the frontal depression; face aside from orbits with semierect to appressed white pile except for a narrow extension of the glabrous frontal area that extends between the antennae and to the upper part of the oral margin. Ocellar triangle with only a few very short black hairs. Occipital pile appressed, white on the cerebrale, otherwise black above and yellowish below; occipital orbits with white pollen-like tomentum and a fringe of white hairs. Genae shining medially, in some specimens castaneous although usually black like the rest of the head. Eyes bare. Antennae yellow, the basal segments almost whitish, flagellar complex and arista orange-yellow; a crescentric polished brownish black spot on inner margin of flagellum, as in *D. lopesi*. Proboscis brownish black.

Mesonotum with considerable appressed pile, mostly yellowish except laterally. Scutellum forming only a slight angle with the mesonotum; pile yellow on disc, black laterally and on the apical fingerlike projection; the latter bluntly rounded and forming an angle of about 45° with the dorsal surface of the scutellum. Pleura with white appressed pile, contrasting in color with that of the mesonotum except on the supra-alar regions. Coxae black; front tibia except at base and basal two segments of front tarsus brown, legs otherwise yellow. Halteres yellow. Wing hyaline; vein R_1 along approximately length of first basal cell brown, the costa less distinctly so along approximately the same extent; veins otherwise yellow except when concolorous with the membrane. R_{2+3} arising interstitially with or slightly before r-m, the latter

very short or punctate. Wing uniformly set with microtrichia beyond its base; bare areas include anterior half or more of anal cell and base of basal cells, but not the alula. Squamae and their pile yellow.

Densely punctate area of abdomen extending dorsally broadly to apex of third tergum but not very clearly discernible, black pilose; first sternum and sides of second quite evidently densely punctate and with short, white microsetulae; abdomen otherwise with white hairs, ground color more shining ventrally. Ovipositor yellow to brown.

Length, 3–3.5 mm.

MALE. Very similar to the female; the frons is narrower, its width not exceeding that of the ocellar triangle; consequently it broadens more rapidly toward the callus. Genitalia not exposed in the single male available and not dissected.

TYPES. Holotype ♀, Santa Cruz (Indefatigable) Island, Academy Bay, Darwin Research Station, January 29, 1964, R. O. Schuster. Allotype, male, same data but February 7. Paratypes, 9 ♀ ♀, same data but January 23, January 26, February 7, and February 20, R. O. Schuster, and February 9, February 13, and February 24, D. Q. Cavagnero and R. O. Schuster.

A female was selected as the holotype because of its much better state of preservation than that of the single male of the series.

Two species have been described previously in this genus: *D. amazonicus* Kertész (1914, p. 545), the type, and *D. lopesi* Lindner (1914, p. 15). *Dactylo-deictes amazonicus* differs from both *D. insularis* and *D. lopesi* in the highly elevated vertex, particularly of the female, the position of the antennae well below the middle of the head, in the lack of a polished crescent-shaped callus on the antennal flagellum, and in other respects. *Dactylo-deictes lopesi* is described by Lindner as having the scutellum set at an angle of 45° with the mesonotum; in contrast the scutellum and mesonotum are described by Kertész as being on the same plane, and this is virtually also true of *D. insularis*. Also, in *D. lopesi* the head from the front is described as shining black with whitish tomentose ocular orbits; this is true of *D. insularis* except that the frons above the callus is almost wholly clothed with appressed pile. I have seen a male from Corozal, Canal Zone, January 21, 1929, C. H. Curran, which agrees with *D. lopesi* in these respects. It is closely related to *D. insularis*, though distinct. If it belongs to *D. lopesi*, the known distribution of that species (southern Brazil, Canal Zone) suggests another mainland migrant to the Galápagos Islands which has there undergone sufficient differentiation to be of specific significance.

ADDENDUM

It appears as though *Chrysochloa fasciata* Thomson, 1868: 460, described from the Galápagos Islands, is a senior synonym of *Pelagomyia dubia* Curran,

although there are some discrepancies in the original description of *C. fasciata*. If this is so, that species will take priority as *Pelagomyia fasciata* (Thomson), new combination.

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